

TRANSCRIPT

INTERVIEWEE: **Benito Trevino** (BT)

INTERVIEWERS: David Todd (DT) and David Weisman (DW)

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Please note that the video recordings include roughly 60 seconds of color bars and sound tone for technical settings at the outset of the recordings. Numbers mark the time codes for the VHS tape copy of the interview. "Misc." refers to various off-camera conversation or background noise, unrelated to the interview.

DT: My name is David Todd. I am here for the Conservation History Association of Texas and here is a beautiful part of the South Texas brush North of Rio Grande City and it is March 1, 2000 and we have the good fortune to be visiting with Benito Trevino who is a ethnobotanist and operates a nursery here and has been involved in trying to promote the understanding and protection of native plants in South Texas. And I wanted to thank you for spending some time with me.

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BT: Thank you

DT: We often start some of these interviews by talking a little bit about what might have been your early roots of interests and exposure to being concerned about the outdoors and its protection. Maybe you could tell a little about that if your parents, cousins, friends, teachers that had...

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BT: It's a, you know, it's one of those things that it's kind of hard to figure out. I came from a family of thirteen and it's strange, you know, that even though there were so many of us and we lived in a two room house there was enough time for—for each one of us to develop our own interests separate from the whole. And I can think back when I was a youngster, you know, 5, 6, 7 years old that I always had a lot of interest in what was around us and we really didn't have hardly any toys or bicycles or none of the typical things that somebody my age might have in other areas. So it would be making observations on grasshoppers or birds feeding, you know, the mama feeding the babies or a looking at a plant bloom, you know, those—those little things. And my family, we

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were so large, in this area, there—conditions here are pretty harsh. There really isn't much work. I come from a migrate worker family background and we would migrate all the time. And I'd spend almost a 100% of the working time in the fields and it was plants. And somehow being associated with plants in my—when I was trying to entertain myself and then when I was working, I started developing an interest on—on—on plants them—themselves not necessarily native. And I recall as a child that my mother would say Benito your little daughter doesn't, I mean, your sister doesn't feel well, could you go to the river and get me the outer bark a Willow—Willow Tree and then on the way back get me the inner bark of a mesquite tree and then get me some cactus root. And I would go. You know, I—I knew the plants that were all around us so I would take one of my brothers or sisters

and we would go and take a machete or an ax and we'd collect the ingredients and we would give them to her and then we'd go on our way. And this happened a lot throughout my growing times. And then when I became an adult I was wondering, you know, I wonder what mother was doing with all of these things, cause I know all the collections of individual things but I really don't understand what she was using them for. And it's when—when I studied at UT Austin, it was the morphology of plants so it was like the nervous system, the transportation system, how plants transport minerals and stuff. And that was pretty fascinating but I couldn't make a connection with my background. But I have the technical knowledge now and after graduating I returned and I spent the great deal of my adult life making those connections. What my mother was doing, even though she only went through 11th grade in school, she was like a pH

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chemist and she was taking salicylic acid from the *Salix Nigra* or the River Willow and then she was taking the bark of the mesquite as a flavoring agent and then she was taking the root of the cactus as a buffer. So she was making bufferin—a buffered aspirin from all of these things. And it's—then became fascinating to me as to how can my mother, way out there in the woods where, I mean, she really doesn't read that many books and stuff, how can she, I mean, how did she learn all these little things. If we had—if we hurt ourselves real bad, there was plants that she could use. And—and now, you know, after I could now do research, what does that plant have that—does it have an anti-inflammatory agent or actually how mechanisms does it use? And it's amazing to me to find out that maybe they learned by trial and error and the information kept on going from generation to generation because there were very specific plants used for very specific things and they all worked and it made sense. If you were to use that plant for another ailment, it wouldn't work and it's just fascinating to me so I—I still, every moment that I have and I find a senior person, you know, in their 80's or 90's that's still around, I just try to extract that information from them because the information itself, a lot of the stuff that I have researched, it's not there. You know, it's—it's—it's handed down and it—it has stayed that way so...

DT: Could you tell about some of these visits with older people and trying to find out what they have learned?

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There—there were at least one person that I believe, he was a he was—he was born in 1900. And I believe that he was one of the last of the like as close as we can get to an American Indian from this—from this area. And to watch his family group travel as a family group, it was the mother, the daughters, the sons. They would always go as a little group. They depended largely—they were very, very, very poor, so they depended largely on—on the native brush and I would find it fascinating to go with them and ask them, what—what would I do if a if, let's say, you know, I didn't have a toothbrush and I—I had a gum infection? And he would say, oh well there is a remedy to that. And I would say, well what's the name of the plant. And he would say, you know, like *borago*, the Spanish name for leather stamp, and I knew the plant but I—I really didn't have much a knowledge of the use. And then he would say, and I would say, what part do you eat, and oftentimes he would laugh like you don't eat it dummy. He said, no let me show you, and he would dig up the root and then he would cut it up into pieces and

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then he would show me how it was used. So, you know, even though my parents knew a lot,

my grandfather on my father's side was a—a wagon train master and they dealt more with ranching. My father on my mother's side was more of a farmer and this man, so they knew, you know, basic stuff but this guy, this family lived pretty much in the woods. He was a—they herded goats. He was a goat herder. So his knowledge even went further, you know, it had other uses that maybe a ranching or a farming family wouldn't have. So those were particular moments. There's a plant that's called Epona in—in Spanish that I yet been able to a cross-reference the Spanish name with the scientific name so I can so, you know, so I—so I know it scientifically. And that particular plant is—is still used today as a remedy for urinar—urinary tract. If you are unable to urinate the way we used to when we were young, you would cut it up and make a tea. And my parents didn't know about it and when they learned about it, you know, many years before I learned about it, they learned it from—from this man who has an extensive knowledge of plants. It was very fascinating to a visit with them and, you know, jus—just go out in the woods and find things from him that—that he still knew and, course, he died several years ago and another encyclopedia of information just kind of gone down the drain.

(misc.)

DT: I am curious if there were other chances that you might have learned about the uses of these wild plants in your formal education at University of Texas in botany or once you got involved as a petrochemical chemist in your work.

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BT: Well, you know, it's amazing to me that a so little of the medicinal aspect of native plants was ever taught in any of the classes that I took. I learned a little bit about the edible plants, some aquatic stuff that's a edible but very, very little—and that's one of the problems that I see with—with people that get a formal education, you know, be it in botany or biology or any or the other sciences. That it's more—more of a pure science and when I became educated, I learned things that I didn't know before but I couldn't make a connection back to the things that I—that I had, you know, I was coming in contact with when I was growing up be it the use of medicinal plants or the poisonous plants that we have in the area. Plants that were used for fiber, you know, to—to survive. These were the tools that people needed and I guess because we're so far advanced that maybe they're more important things than—that they need to teach other than, you know, how to survive, you know, like how to survive in the brush country well,

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you know, who is going to use that information? But, to me, that information, even today, applies to the people that live here. I can recall many, many instances where there would be absolutely nothing to eat in our home that, you know, you could go to the store and buy. And my mother would all of a sudden say, you know, we need to do something. We don't have any money, we don't have any food. Get that five-gallon bucket, and get that stick, and get that knife and let's go out to the woods. In a couple of hours we'd have a feast. You know, we'd have—we'd have fruits, we'd have greens we had, you know, we'd gather roots and leafy stuff. And she could actually use some of the ingredients that she would use to cook a typical Mexican meal but we weren't having a typical Mexican meal, but she would use the spices and stuff and it was great. You know, and those were the things that—that I think in a formal a setting those are missed. You know, they just don't even a address those things which are still I think pretty important.

DT: I understand that after you worked in the oil industry you managed to return to your

roots north of Rio Grande City and actually purchase a tract that had many of these plants that your mother had harvested over the years and also had a history with your family, many, many generations back. Can you tell how that happened?

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BT: It was always our intention including my wife which was very supportive a to—to return and basically we wanted to have some kind of impact in—in South Texas. We didn't know what. But we wanted to—to have an impact, not just be somewhere and live and have a job, but actually to touch somebody. You know, to get things—people thinking about whatever we decided to do. So when—when I was finally to a point where we were making money, both my wife and I, we said, you know, we're really making real good money and we're kind of like on high lane and we're doing everything that everybody's doing that's like our age but that's not where our heart is. We need to forget the job, forget the money and go back and do the things that we want to do. Even though we lose the income and the travel and the adventure and all those kinds of things. So, as soon as we moved to Alaska and we making substantial amount of money we seriously decided, you know, we need to set up a budget and do the things we want to do to kind of get us started. We were basically buy a small tract of wooded land, build a small home and somehow try and figure out how can we make a living off the land. And we worked for two years and we had sufficient money and then we returned and we were looking for a piece of property. It took us almost a year and a half. We looked at hundreds of thousands of acres. We would go and just traverse through—through cow paths - and study what was there. And then we ran across this piece of property. And I told my parents, you know, we found little piece of property kind of northwest of Starr County

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and I find it real fascinating. And he said, have you looked at the maps? The porcion maps? And I said, no. The original Spanish Grants were 2 miles wide, 15 miles long. They were narrow and very long. There were something like 28,000 acres. And they were deeded to the early settlers. They had to make a living, most of them had cattle. So they had to have sufficient land to raise cattle, raise horses. make a living. But by Spanish law, they couldn't take possession of water rights. So they're real long and skinny. And they all come to the river so everybody had water rights. And this porcion belonged to my great, great ancestors. And when—when I found out that this piece of land that—that I really—we really liked because of the brush, it had several different ecological systems that I was interested in. It had some plants that were, in my view, at the brink of becoming extinct or at least endangered and it also represented a portion of my background. So we decided seriously to just disregard the rest and concentrate on this piece and after about a year of negotiating with the previous owner, we finally had it in our possession. So it's kind of nice that we were able to retain something that is back 300 years historically had belonged to my family. So it's a little extra bonus.

DT: Can you describe this tract and what makes it of interest to you?

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BT: This tract is a very unique because it has about seven different soil types. And it is a perfect place that represents almost all South Texas except for maybe a beach or wetlands, in a small a piece of tract that you can get, I mean, almost all of it is here. And one of the things that is very precious to me is what is called a Ramarrero. Ramarreros do not exist almost anywhere except in Starr County and maybe a little bit of Hidalgo County and that is

it in the world. It is a very, very unique ecological system composed of thorny brush, native plants, plants that you would never find here. You know, we're seven or eight miles from the river and you would never find here species like a Sugar Hackberry or Anaqua, the ash, the cedar elm. Those species are riparian types. You would find them along—along the river, maybe on the side of a large lake. Here in this upland habitat conditions are very harsh. When it rains we have clay soils. The water just drains out and goes to the river. If it rains three inches, we're lucky we get inch and a half, two inch penetration into the soil. Well, even here, eight miles from the river we find those species of a—of a plants in this particular habitat which is called a Ramarrero, and it's the Spanish name for a branch is rama and Ramarrero kind of says that there's lots of branches. And it's very, very—it's kind of like a thicket. Very dense. In fact when the Spaniards came here one of the reasons why they didn't settle a lot of this area is because there were the thorny brush and the Ramarreros. They couldn't penetrate them. They were just so dense. And today that particular ecosystem is in danger, it's threatened because of clearing. And there's one that goes right across this ranch so we were just, I mean, when I saw that it—it—it was almost like 50 acres of the ranch was traversed by Ramarrero along with the other things, some of the other plant species that were here, we decided this is it. I mean, this is a little jewel that it's almost extinct and someday I know it is going to happen sooner or later. Our neighbors all around us will probably continue clearing and this will be like a little strip of the

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Ramarrero that goes back, you know, for long time and it's—we still have it. So we're hoping to preserve it. We're still building on it. Some of the plant species that—that have disappeared, you know, I have reforested and updated (a fly is bothering Benito. It is distracting him and they stop for about 10 secs)

DT: Can you talk about some of the other ecozones there?

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BT: We have a very unique piece of land that you notice when you're coming into Starr County basically from almost any direction you are coming to flat land and then when you come into Starr County, you get little hills, hence the name of our ranch Rancho Lomitas means the ranch with hills. And when we decided to give it a name, we wanted to give it a descriptive name of what this would represent and we have little hills. These little hills were—were formed probably when—when the ocean was here and the river would bring in rocks from—from Colorado and from other states and had this depositions. Then later erosion occurred and it formed some of the Ramarreros and creeks. And those little hills have like the cardinals, the Pyrrhuloxias, some of the real, real thorny brush that would not survive in areas that would be too wet or that the soil, even this clay soil, they wouldn't survive. These little hills are composed mainly of a calcium carbonate or caliche, along with a little bit of sand or gravel. They're real well drained and the species of plants and animals that normally in—inhibit these little areas are very unique. So without the little type of environment you wouldn't have that—that kind of, you know, the—the Cactus Wrens, the Thrashers, the kind of semi-desert type of birds and animals we find them here at the ranch because of those little hills. Typical to South Texas, the thing that I envisioned when—when I was away and I would think about South Texas, I would think about Mesquite trees, Yuccas, Prickly Pear, the rest of the—this ranch is composed of that, the typical South Texas thorny brush which is basically Mesquite, Yucca's and the Prickly Pear Cactus. So that composes a—a—a great portion of what South Texas was like before, I would say before

the 40's, when they started clearing a lot of the land. So that's very, very special to me.

DT: Can you talk about some of the land uses that were here or...

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BT: This particular ranch was pretty much just used for grazing. But when my—when my grandparents, what I remember, they were basically cattle ranchers or they raised horses mainly. There was a little bit of farming usually done—they would plow with mules. I—I remember many, many times watching my—my grandfather using a little plow with a blade that had to be replaced every two or three years cause he would just wear it out from furrowing so much land. Hardly any of it was irrigated. The people would have one or two wells, water wells, in the area that would be not necessarily deep wells but they must have been some kind of underground system that they would always have water. And I recall several times when I was young I would ask my grandparents, where are all the people coming from, you know, cause it was like my—my—my—my—my grandparents and my aunts and uncles and us. You know, we were just a very little community and that was our family and extended family. And sometimes I would see so many people coming to my grandparents and I would see, you know, they would bring cattle and they would bring horses and well it was when they would have severe droughts and the wells that they would normally use to feed their—to water their stock and for their normal daily use would run dry. And both my grandparents were lucky that they both had water wells that never went dry. So they would attract—they were like magnets. They would attract people from—from a very, very large area around where they would bring their animals. The river between, I mean. before 1955 when Falcon dam was constructed, you would have floods and then you would have isolated pools of water and then it would be dry. Pretty much dry. The water, when little pools would separate, it would stagnant and it wasn't suitable for—not even animals would drink out of it. So they would—depended on these water wells. And I know both my grandparents' wells, water wells. were very shallow. I mean, they were maybe 20 feet deep. So, you know, those were very—very neat memories that, kind of, I guess, helped shaped my way of thinking and, you know, kind of shaped me and who I—who I grew up to be.

DT: You speak about some of the plants and live stock found around here can you also tell us of any wildlife that you've seen in this area?

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BT: One of the—one of the things that encouraged us not to do any—any clearing or anything, where the house is right now was already cleared by deer hunters they - when - they - when prior to us buying this ranch, it was a 338-acre tract and it was used for grazing cattle and leasing for deer hunters. And they had cleared this area and when we decided to build we figured, you know, we don't want to disturb anymore. We'll build right—it's already clear, we'll put it right here. So kind of like somebody, in the past, really established where we were going to put our house. But we were encouraged that we did have a Ramarrero and that it is prime habitat not only for the monarch butterflies and a lot of the migrating butterflies. For example, when the monarchs are moving South, when they come across the Ramarreros, they use them as freeways and if the Ramarrero didn't exist, the butterflies would probably not be able to continue their journey because this particular ecosystem has flowering plants, it has moisture, it has minerals that the monarchs require. In the upland habitat the rest of the ranch doesn't have it. So when the monarchs finally—when they are moving and they find the Ramarreros. It's amazing to walk, you know, 100

acres and see four or five butterflies then go into the Ramarrero and see, you know, stand in any one spot and you might spot thirty, forty different kinds of butterflies right there. Because this is real precious belt of land that eventually connects with other little parcels and makes it all the way to where they're going. One year we had seen tracks that resembled a cat and we thought, you know, we do have a lot of bobcats so it could be bobcats. And then we sighted, or at least I sighted, an Ocelot and that made it worth saving, you know, this piece of land. And it was about two years later, not on this ranch, but in an area real close where the Ramarreros still connect, I was walking along the roadside and I—I happened to glance on this little bluff that had little short grass, real thick vegetation. there was a little opening and I just stood there and, you know, I was just looking at the little native grass and then I saw a little head pop out of the grass and I had my binoculars with

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me and I for—for a moment there I couldn't—I couldn't say if he was a dog or a cat and I said God what is that? And I grabbed my binoculars and it was a Jaguarandi. And here's—here's the head that I was looking at and then a little head popped up on the side and a little head popped up on the side. It had two babies. And like wow, you know, that—that really made my day. To know that even though nobody has done any surveys to either acknowledge or say they exist or they do not exist, I know that they exist in this area. And that, to me, just brings that in me in—in—in talking to ranchers, especially ranchers, and encourage them not to root plow not to clear, you know, to find different ways to make a living using the brush. You know, bring in tourists, or making jellies and things out of the things that grow here for sales rather than to clear for live stock because, you know, along with our culture and history, you know, we're losing so much. And if we can just hold on to it a little bit longer maybe, you know, they'll be able to multiply and—and survive the culture and the critters and the plants.

DT: Can you explain how you found a way to make a living out here on your tract of land? I understand you formed a nursery?

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BT: It—it, you know, it just boggles my mind how—how people could survive here. And they did for centuries, you know, for hundreds and hundreds of years. I find arrowheads here that have been dated to, you know, 5000, 6000, 16,000 years old. Obviously they lived here—they—they survived here. And when my wife and I moved here, I decided, you know, I know I can make a living working many areas. I mean, I—I—it doesn't bother me to be a janitor or to pump gasoline or whatever. I mean, I've done it before I've had, you know, really bad jobs and I had some good jobs. But I wanted to see can—can people today actually make a living without destroying the habitat that we have and because of my interest in plants I—I started a small native plant nursery. And it was basically more—more of a research type than anything else. I really wasn't growing for sales. I was just kind of exploring the possibilities of what things can

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be marketed how can we produce them? You know, it's one thing to buy a tomato seed and mix the soil mix and put the seed in water and a tomato comes up. Well that's a tomato that's been under cultivation for—and worked on genetically for many, many generations. Native plants are extremely difficult to germinate. Some of them you could take 1000 seeds and plant them, you'd be lucky if you got 50 seedlings to come up. So when I first set up it

was kind of exploring one of the possibilities that I might be able to do to make a living right here without destroying anything. Just be part—part of the woods rather than, you know, destroying it. And I worked on that for about two years in my little—and I tried many different techniques of germinating different things and then finally when I decided I think I can do it, you know, and I think I can actually—it might be hard at first but I think I can find enough people that have interest in landscaping with native plants that are the best choice around. You have color, you have texture, you have, you know, blooms for attracting birds and butterflies. And, you know, anything that you

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can find with exotics, you can find natives. The only problem is that if a person gets married, they buy a new house, they buy—have a nice little lot, they want to landscape it, they go to the nursery and they buy what the nursery offers. Mainly exotics. Lots of color, lots of stuff, so that's what they use. And I figured they need to have an alternative. So when they go to the nursery, they have more choice and when they think about low maintenance, hardiness, along with color, you get—anything you can do then maybe they'll start thinking hey, yeah I'm going—I'm going to try natives. And it has been—my first two years I would grow and give away cause I ran out of space. And I needed, you know, I need to grow more but I'm out of space so whoever would come and say, what is that? I would say oh, that is a scarlet sage. God it's got a beautiful red bloom. Yeah you want it take it, I need more space for the other stuff. And—and eventually, I started moving them from a one gallon up to—so it took, I would say, basically about twelve years before things started to happen. And now I have trouble keeping up with demand with native plants. The demand has just skyrocketed. Thankful to the Texas Nature Conservancy, the Parks and Wildlife, the Department of Interior, the Sierra Club, the Frontier Audubon Society, you know, all those organizations that have pushed the use of native plants, have educated people, have had seminars and people are learning all the advantages that they have. They're starting to appreciate birds and they realize that if I have my yard and I have lots of exotics, I'm not going to have the birds because birds are like people. You know, if—I recall going with my wife and in-laws to a restaurant and they would order shrimp and oysters and—and I would be thinking, God what can I order to eat? I mean, like those foods are foreign to me. I—I don't know how to eat it. I don't—I don't develop the taste for it. And birds and

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animals are the same way. You know, there might be plenty of food here in an exotic plant and they simply do not recognize it, they don't recognize the smell, they don't recognize the taste. So even though we might think, you know, I'll—I'll plant this plant and it'll—it's good food, it'll bring birds. No, it won't bring birds. They don't—they don't recognize the plant for nesting material. So if they're interested in—if they have any interest in—in the wildlife then they'll develop interest for the natives. Because that's what brings them—and those interests have sky rocketed. You know, butterflies—I have seen—I—I saw birds first, you know, they—everybody was big on birding. And, in the last few years, I see butterflies. So now there's a big demand for butterfly gardens. We have lots and lots and lots of native plants that the adult butterfly has no use for other than laying its eggs but without that plant the species would die. Because that's where the adult lays its eggs and that's what the—the caterpillar feeds on. Even though it doesn't have a flower, some of the plants in the background here is a native plant called Guaiacum, a fascinating plant itself. But one of the uses that—that we have for Guaiacum is that the lyside butterfly, little small butterfly,

will check all the plants of all the four hundred and fifty species that we have in our surrounding area. It will not choose any of the plants except Guaiacum to lay its little egg. And that's what the caterpillar feeds on. Right next to the Guaiacum I have a plant, the lime prickly-ash colima that also has a— a medicinal use and the giant swallowtails would not lay its eggs on any other plant other than the colima. So as—as people become aware of those things then that's what attracts the native plants. And that's what has helped me since I know whenever I do lectures or talks, I pretty much label my talks as the many uses of native

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plants. And I use landscaping, butterfly gardens, medicinal, poisonous and things. So if—if myself and other people spread the information about natives, the demand for natives go up. So thanks to everybody. But, you know, other than with a—with a native plant nursery, my wife and I try to harvest, for example, the seed pods of the Mesquite tree, one of the most prevalent trees in South Texas. The seed pod contains about 33% sugar and it was used by the indigenous people they—they would grind it by digging a hole in the ground, not necessarily hard rock or anything, on the ground. It was dig a hole, they would harvest the seed pods, they would throw them in this hole. Then they would take a big stick and they would break it up. And, you can imagine. a little bit of moisture, 33% sugar, dirt, it would become a pretty messy material. But they would—after it was all cut up and broken up, they would take it up, they would roll it into little balls and then they would set it up in the hot surface in the rock or in the soil and they would dehydrate it. They'd remove all the soil. This hard ball would get real hard and then they could travel. They could take a yucca, they would cut the leaves and weave a little pouch. They would put the mesquite balls in that little pouch and then they'd—if they had to travel for a long distance, they had their food right there with them. They would take this little mesquite ball 33% sugar, vitamin A, vitamin C, vitamin D, amino acids. It would have fructose, glucose, galactose, all the simple sugars. So it is very high in energy, a little bit of protein, and they could use it. Well, we take that bit of information and then we put it to use. So when we do tours, we tell people we're going to take mesquite seed pods before your very own eyes and we're going to make chocolate chip cookies using flour that we will grind right here. While I'm conducting the lecture,

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we will grind the flour and my wife will make the mix and before you leave you will eat chocolate chip cookies or oatmeal cookies or sweet bread made from the mesquite. We make honey or jelly from the mesquite beans so we try to incorporate other little things that we can, you know, we couldn't probable make a living off of one thing and indigenous people couldn't. Whenever they were hungry, almost all native plants have a downfall to them. If you can see a little white flower in the background, that's a Mexican olive or Anacahuita. It produces a seed that's about the size of a regular olive and the fruit is edible but there's a word of caution. If you are starving and you become across a Mexican olive tree and the whole ground is littered with these little fruits, eat no more than maybe five at any one time. Because if you eat more than five, maybe you—you're real hungry and you stretch it and you eat maybe seven or eight or nine or ten, you will live to regret it. It would give you an extremely bad headache. You would be very, very dizzy and it would make you literally sick. If you eat more than you should of, you experience those things and you might even come with a really bad diarrhea. And all most all native plants are that way. They'll—

they'll have a drawback. The—the indigenous people knew that and they would harvest the Anacahuita all the Anacahuita they could find. They would harvest the Prickly Pear fruit. They would harvest all of the mesquite they could find and then when it was time to eat, I tell people they would eat cafeteria style. They would have a little bit of bean pods from the mesquite, a couple of

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tunas, five or six seeds from the Anacahuita, a little—a little bit of granjeno and then they would eat on all of these things and you're fine. If you just kind of mix them up and not engorge in any one thing, you're fine. Some of them will give you severe diarrhea. So if you look at it genetically, there's a reason why a plant would not want anyone to eat all of the seeds because then you have one chance of reproducing. But if you introduce a chemical that will make somebody sick, an animal will learn, they will eat a few and then they go on their way and disperse the seeds in this direction, then another one will disperse the seed on that direction and your chances of survival are then multiplied by however many eat from your tree. So that's a genetic basis for it and—and the indigenous people learned how much and what not to eat and—and we try to take advantage of that and—and produce what we can sell.

DT: Speaking of reproducing, I am curious how you found some of these specimens out in the brush and collected their seed at the right time of year and helped them germinate and cultivated them?

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BT: I was a—I was...

(misc.)

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BT: I was a little I—I—I really enjoyed history and I kind of think like, I guess I think sort of like a tree or I think if—if I'm a tree—I'm a mesquite tree, say okay, how can I reproduce? Well I could reproduce if—if—if somebody would eat my seeds but it wouldn't be like a bird because my seed is real hard. It would be like a hoofed animal like a peccary, or maybe a deer or something that would chew me up real good. So I'd say okay, so I think that in order to germinate mesquite I have to grind it really well. Like what an animal would do. And if an animal ate a mesquite seed pod, it would eat it up and it would spend a great amount of time in its digestive tract and then it would—it would pass through the system. So then I'd say okay, if I'm going to germinate it, I probably need to grind it up, then I would probably need to keep it really moist for maybe one day or two days before I even germinate it. And sure enough I can take a mesquite seed—seed pod, break it open and plant it and it will never germinate. I mean I shouldn't

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say never but it would take one or two or three years before a little seedling comes up. But by observation and—and thinking okay how—who would eat this and what process would this seed go through before it would germinate? So I try to use those techniques. Some of the them—some of the fruit, sort of like granheno(?) which is a real fruity type of plant. I would think well a bird would probably eat this—this seed. And it would probably go through it's system pretty fast and the bird dropping would—it would drop it somewhere. And so that seed I would have to treat different than I would like Mesquite. A Mexican olive, the same thing. It would go through a different process. So rather than just planting seeds and see what happens, I would have to think what process would this seed naturally go

through in order to germinate? And then I would have to simulate that process and get it to—to germinate. So it was, you know, it was doing a lot of thinking and kind of thinking it through rather than just planting them and see what happens. Well I'll try something later on. So that—that has helped me a lot and it's still amazing that not a—not a single year, not a single growing season goes by that I don't discover a

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quicker way, a better way to germinate than I did last year. And, you know, to me that—that in itself, makes it exciting. I never, I mean, I'm doing repetitive job. It takes me almost two months just to fill the tube with dirt. Everyday from sun up to sun down, seven days a week and that is extremely boring but then comes the seeds and—and then I unlock something that I didn't know last year. A species that I planted 2,000 of last year and I only got 200 this year. I've discovered that I can plant 1,000 and get 800. I am going to write that down. You know, so those things make my day and it just—I find hope that not in the too distance future, I see that the wood from the mesquite tree would—would find a way into lumber—lumber stores where it would have things made from mesq—hardwood floors and other things made from the mesquite. Well, it would pretty much wipe out the mesquite population. If we would just harvest it and not have anybody to reproduce it in large quantities where it could be—become commercially available. So a farmer owns 1,000 acres and the price of watermelon has dropped and he has already failed three years, plant mesquite. Have a mesquite orchard. And we now have a technique that is—it'll be commercially feasible to produce it in large quantities. So then in a few years you'd have a lumberyard right there. So those are the things that—that excite me because I can find new uses for plants that have always been here. That people that have the land, they can put this plants back and actually make a living out of it. You know, the Tuna or Prickly Pear Cactus has a real high demand in Japan

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and in Italy. The production of the tuna cannot meet the demand for the fruit in those countries so it grows fine here. So some people are saying well, there's a couple of people that have told me that they were like three generations—third generation farmers. They would produce Sorghum. And they can produce more income in one acre of Prickly Pear than they could in 20 acres of Sorghum. Now that's—that's a thing that will ensure that Prickly Pear will be here for a long time. Those kind of things. And it excites me when—when we discover things that make that thing possible.

DT: I have heard and maybe you mentioned this earlier, that a number of the plants go to private clients like the ranchers that you mentioned but they might go to the Nature of Conservancy or to the Department of Interior for them to plant. What would they be using them for?

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BT: The Department of Interior has a goal of preserving anywhere from 4% to 8% of—of what used to be here. We're—we're losing it. In—in some habitat's we only have 98—98% has been lost. In other types of habitat, we have lost 95% of the habitat that used to be here through farming and development and whatever. The Department of Interior has a—a plan to conserve at least 4, maybe optimistically, 8% which is almost nothing of what we have. And one of the programs that they have has a large demand for native plants to restore habitats. Some of the old fields that—that have been—the soil has been exhausted, the topsoil is gone because of continuous farming. Maybe they had the luxury of using water

from the river to irrigate. The salinity content has gone up and they can't do much with farming. The Department of Interior will purchase some of that land and because natives have a tap root and they can penetrate real deep into the soil. They restore that to what used to be historically here. And they buy a lot—lot of plants

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from me. But also as that goes along, a lot of the ranchers are starting to realize that you cannot compete with feed lots in—in Dallas and in El Paso and in other areas where a guy—a rancher here clears 1000 acres. You know, the average ranch in Starr County is 8,000 acres. The average ranch, I mean, that's—that's a good chunk of land. So it's not untypical for a—for a rancher to clear 1 to 2000 acres of—of brush land to raise a few more head of cattle. Well, that's not going to make it. You—you have to have a much better return for your money. You cannot afford to sell a cow for \$100 here at the sale and somebody will buy it, take it to a feed lot and turn it around and sell it for, you know, 2 or \$3,000 to the meat industry. I mean, you're really getting the—the lowest price you can. And a lot of them are starting to realize that. And this is never going to change. We cannot produce more. We cannot produce more efficiency because of our climatic conditions. So they had to find alternative ways and one of the things that they are looking more and more into is, you know, I still have 600 acres of land. I've really abused it. I really have grazed it, you know, to the maximum but if I restore it, I can bring tourists. I've got the birds. We've got the wildlife. We—we've got about the best diversity there is around as far as plant life. So they're thinking more of diversifying and one of the real easy ways to diversify is to encourage winter Texans and others to take tours and enjoy the native plants and the—the wildlife that we have. So those are

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becoming other nice sector of customers here that I am catering to. I—I specifically cater to their needs. Somebody says, you know, I want to bring birds and butterflies to my ranch. I'll say, I'll—I'll cater to you. I will specifically grow those plants that you need for that kind of thing. Other ranchers will come and say, I don't want to mess with people, you know, I've got 2,000 acres of land and I want to increase my deer population for deer hunting. I—I want to get more money. I want to produce bigger bucks in my land. I want to charge more. I'll cater to you and I will taper plants that will increase your deer population because those are the browsing things that deer will—or need. So because I—I'm lucky enough to have lived here, other than a period of time when I was gone when I graduated from high school, and then after I made enough money to come back, I live here. I know—I know the area. I know the plants. I know who needs what, you know, as far as the animals and—and stuff. So I'm in a—in a very nice position that I know the wildlife and I know what they feed on and I know, you know, I know the things that are needed in order to make their dreams come true and that's another little sector of my green house, that every year it keeps growing and growing and growing. So it's—it's kind of nice that it's expanding.

DT: You mentioned that you and some of your neighbors are trying to capitalize on the winter Texans that come here and of some of the ecotourists. Can you talk about some of the tours that you provide and what people are interested in? How do you peak their interest?

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BT: It's—it's amazing that a for—for—for a long time, the tours that we got were birders. And, you know, I—I really, really enjoy people in general, and especially the people that—

that have the time and luxury to take long vacations and—and come to a place such as this because it's such a clean economy. You know, we'll be walking up in a trail and somebody might have discarded a—a coke can or a gum wrapper and it's amazing to see them, you know, pick it up and put it in their pockets. So it's a clean economy and for—for a long time they used to come and bird and we have about 142 species of birds right here that they can enjoy. And well, you know, I'm a botanist I—I—I can't help it. We would do birding. You know, we would bird for—depending if birding was good, we would go maybe 45 minutes of birding. And then I would tell them hey, let's go for a ride. Let's go and let's botanize, you know, talk about native plants. And some of them would say, nah, I'm going to stay here and bird. Okay, well those of you that want to stay, you know, we also have more birds down there and those that want to come with me, you know, we'll take an hour hike. And half of the group would go with me, half of the group would stay here. And I started seeing the numbers started to shift, you know, to where 100% of the—of the group will bird watch for 45 minutes and then 100% of the group will go with me because word has spread that man, and I—I tell them, imagine you go into a library and you're walking through aisle and aisle and aisle of books. All kinds of books, until you look at them and they're just books and then—and then, all of a sudden, you stop at an aisle and you see a book and you become kind of interested, you pull in out and you read it. Man, it's like another world. I said, picture that here. Because if it be anybody else, you'd be walking here and you'd be looking at green stuff. But when I am with you, all of a sudden. I'll stop and I'll tell you, did you know that this is manzanita? It's called Barbados Cherry. And this plant is edible and it's a medicinal plant. It has anti-inflammatory substance in it and my—my grandfather,

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my father and even I used it when I was young. I got kicked by a mule one time in my leg and it kicked me so hard that it swelled and before I panicked my father said, okay son don't panic, don't move, stay right there and he ran to the brush and he brought this little—a piece of this plant with him. And he tore all the leaves apart and he chewed to get it moist and then he applied it to my leg and he took his—his handkerchief off his neck and he wrapped it. I said—and I had been kicked before when I was by myself and God man I felt relief within a couple of hours. I could walk and then I expected two or three days later to be a big bruise in my leg. No, none of that because the use of this plant. So here we had the use. If it was producing berries and we were hungry, we could make a jelly. We could take it inside the house and make a jelly. And—and I repeat this almost plant after—little history, little things so to them it's like, man you are right. This is like a library. When we're with you, it's like one chapter, one chapter, one chapter. I did a tour one time for forty-five minutes on the trail and we went forty-five minutes. They—they only had an hour and they got here and used the facilities and then we went on a little tour. And then they had to leave. And then I had a group of students that came from a university and in the same trail that I did a forty-five-minute tour, I did seven hours on the same trail. And it was on a weekend and my wife was with me, and as they were leaving we could hear their—the doors in their vehicles as they were locking the gate and they were leaving and my wife said, you know you didn't talk about this. I said, yes, I know. I said didn't realize, you know, I—I try not to ever make my tours—and we attended tours to see how tours are conducted and almost 99% of the tours we say, uh huh, we don't want

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to do it that way. Because it's like—there might be ten people that do the same tour and it

doesn't matter, you could get—you could do the tour ten times and you hear exact same thing. When I do it, I tell the people, let's go out there and see what's out there. And I'll be walking and I'll see something that's blooming and I'll talk about the most in—interesting things. But this time it was seven hours. It was a seven hour tour and I realized, there is so much here. I cannot even cover it in seven hours. That's how diverse, that's how many uses native plants have. And mainly it was just the uses of native plants. So I've—I've had people that tell me, you know, I didn't want to come but my aunt said, you know, I'll pay for you to come. I want you to come with me. I said, no. I thought she said they were going to talk about plants. I thought it was so boring. It is the most interesting tour I have ever been on and I've been doing tours for, you know, the last 20 years. So I guess when I do it, I get really excited. Because, I mean, like I can't help it, you know, I love doing this stuff and I—I—I—it saved my life. You know, this stuff saved my life. It saved my—my family's life. We would have starved to death. We would of—we would of probably died from some illnesses if it hadn't been for this stuff. So I get excited and I think the excitement transfers onto the group and it—they leave here really, real excited.

DT: These people come from many cities far away and if there is a great deal here you see you see so much here yet I guess it's in comparison to what they've left if where there's so much that has been lost. And I am wondering if you could comment a little bit on what's been lost and what you are saving here?

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BT: One of the things that really bother me sometimes is when—when somebody, you know, a Canadian or somebody from New York or, you know, someone from up North come to the tour and they tell me, you know, they used to do something similar to that when I was young but I can't remember what it was. And I say, you know, how true that even here in South Texas I have kids, you know, they are maybe 4th or 5th grade and they'll come here and they'll see a colored lizard and they all almost all at the same time yell, an iguana. I say, oh my God, you know, we're losing so much. These kids—when I was young I was, you know, like I said, you know, HEB and Wal-Mart and the town, Rio Grande City, consisted mainly of—of two hardware stores where you would buy a plow and you would buy a can of beans in the same store. And basically that was it. The rest of it, if you needed a tool, you made a tool. If you needed, you know, a cup, you would find an old tin can and you would remodel it, reshape it, and that would be your cup. And you would treasure the thing. And, you know, we have lost so much and even the generation that's coming loses so much. So when they come here, it's amazing to me that when they came here the first year, I thought maybe two or three things will sink into their mind. And then they come maybe two years later and one of the things that I do is I repeat the same things to them, the same plant. I'll come across Barbados Cherry and I'll tell them, you know, this is Barbados Cherry, no thorns. Remember I told you that this is thorny brush country. Well I lied to you because there are some that have no thorns. And it is called—and I'll tell them, and I'll say, take a—take a piece of it and smell it and taste it. And then two years later, well when I'm doing that, I let it go by and maybe ten minutes later I will say, what is this plant? And two or three will remember. And that's going out. When I'm coming back I see the percentages, you know, like 50% of the kids

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are now yelling Hawthorne, granjeno. Well, two—two years down the line, I get the same group and now they're a couple of grades up and I'm amazed that I had an effect on these

kids. They remembered a lot of this stuff and then now they're learning. One of the things that I—that I'm—I'm working on is when I read a book and I'm—I'm doing research on—on a medicinal plant and it will say, you know, Barbados Cherry has medicinal uses period. I mean they don't even—they know it has a medicinal use but they don't know how it's used. Is it chewed, is it boiled is it drunk as a tea. So those gaps I'm hoping that someday I'll be able to fill so that it makes the whole picture complete.

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(misc.)

DT: Well, we've talked some about your visitors who have come to appreciate what they might have lost back home. I am curious what you fear losing in your area. The things that need to be conserved, what sort of challenges do you see there?

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BT: You know, we have several—several plants that are rare and that is the—the classification that they're classified as rare which is nothing to worry about. It just means, you know, we don't find them very frequently. And then there are those that are threatened which is a little bit more severe and then those are the ones that are the endangered list. And I'm really worried even from the rare ones because—because of the destruction of habitat. There is so much destruction of habitat. The few endangered plants that we have are not being, you know, there's no recovery program that I know of to ensure that, you know, years from now, we can move them down to the threatened list, remove them from the endangered list and then hopefully many more years they could be even listed as rare and, you know, be given a lower category. So I am really concerned

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about those species because I feel that when we should act is when they're rare or threatened, not like on some of these species they're already listed as endangered and we haven't acted yet. You know, there is a chance that we could have—I know one—one particular plant, the Ashy Dogweed which exists—there's a population of about maybe 300 or so right at the Zapata, Starr County area, the county line and it's a nice viable population but I'm concerned that the genetics of that population are—they're probably pretty much similar in every—every plant because it's probably they're related. It's probably one little population and they're all members of the same group. And some people don't worry because they say, oh, you know, there's plenty there. There's still 300 left there. Well what happens if an insect is introduced into this country through fruits or whatever and it happens to enjoy Ashy Dogweed and it wipes out that population. Then what? And even if we had a cache of seed from that population it would be susceptible to that insect just like that population was. So I would like to see more dedication done to the germination of, not just that one population but,

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seeds from the few populations that we have so that we have genetic—a larger, a broader genetic base, rather than just one population. Then there's several—the a—the a Walker's Manioc, another endangered plant that we have is treated the same way oh, there is plenty of them. But I'm concerned that by the time we decide to act, the seeds would not be there. A major freeze could come through, a major drought and just wipe out the whole population. So those—those are some of my concerns. Some of the plants that I am able to work with are those that are rare like the Texas Baby Bonnet. I can germinate that and I—I normally germinate at least 1,000 a year. So by what I do alone I—I sell to nurseries and

they sell to other people and, at that rate, in not too distant future, we should see Baby Bonnets grown in town and, you know, in areas where it normally wouldn't grow. And, to me, that's an alternative. Either we can grow it in its historical site where it used to grow native because that land was destroyed, there's another option, we can encourage people and it's a beautiful plant and they can landscape in their homes. And we have a viable, diverse genetic population growing all throughout. So those—the ones that are rare or—a or—a uncommon, those I try to propagate as many as I can and—and try to sell to nurseries at wholesale so that they can dis—distribute the population. But the other ones, it's almost—almost impossible to grow them because of all the regulations and rules and stuff. You know, it really disturbs me that I can own this ranch and I can

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have an endangered species, and you could be a federal law enforcement officer and this plant is federally protected and I can take a—if I'm burning cactus pear for my cows, I can turn that torch into that plant and torch it and there's—there's nothing anybody can do about it. I can destroy it if I want to. But I can't grow it. It's against the law for me to harvest seed and grow it. And I—I find that, you know, totally ironic an that, you know, something definitely is wrong. When—when there is no laws to destroy those few plants that are endangered if you're the landowner and yet, if you are a landowner and you have them, you're not allowed—it'll be a federal, you know, you'll be breaking federal law if you propagate them, I mean, that is just incredible to me.

DT: Can you maybe mention other instances of foolishness or misunderstanding that maybe stands between us and good conversation?

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BT: Some—some people are, like local ranchers they panic when they say there was an Ocelot. Because they think that immediately the federal government is going to come and they won't be able to hunt, they won't be able to farm, you know, there—there will be federal agents all over the place. And, you know, that is a total misunderstanding. In fact, there are many programs, the Nature Conservancy and the Department of Interior, and Texas Parks and Wildlife's, do a lot to encourage ranchers and farmers to, you know, if you—if you're farming and you poisoned your crop and an Ocelot came into your property and ate a rat that had been poisoned and it died, that's okay. Don't panic. You know, we can allow a permit for one take or two takes but oftentimes, I hear old ranchers say that they think that there's an endangered cat in my ranch and I still have 200 acres of brush so I am going to clear it to make sure the federal government stays away from me.

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So—so some of those things, you know, it takes—it takes years of—of talking to people and making them understand, no sir. In other words, if you have it and you want to increase your—your—your brush, there is a programs that will help you. I will grow them and then we'll help you increase your brush seeds. You know, they—you own the land, you're—you're the king in your property. You don't have to panic and destroy it and make it even worse when, you know, so those—those things we're still—we're still lacking in communicating with—with landowners and making them realize that it's not bad to have something that's threatened or endangered, it's good. And I heard somebody tell me, it's against the law to have an endangered plant in your property if you're making money out of it. You know, I couldn't have an endangered plant here and have a tour and I'd be charging for the tour to come and see the plant. Well, you know, it's an extra means of

income and it might encourage me to, you know, save that area cause I am making money out of it. So I think that, on both sides, there is a lot of work that needs to be done. You know, the—the agencies that—that make these regulations, they have to take a second look in the best interest of the plant or the best interest of the animal. You know, we have to be more flexible. We have to give the landowner a little bit more flexibility and we, ourselves, have to do things that, because a certain branch of the federal government is responsible for the reproduction of these plants and they're too busy reproducing them, they should be flexible enough to issue permits to people such as myself that I—I have proven myself. I have grown, I would venture to say, maybe 200,000 seedlings in—in five or six years. I know how to germinate, I know how plants

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work, I know their nutritional requirements, there sun requirements. I can—I can practice in a related species until I become very efficient and then you give me four seeds and I can produce three plants. And then, from there, I'll have a seed source and ten years down the line, I can give you 20 pounds of seed and somebody can trade and we'll have a, you know, those things in—in the way I—I feel that work needs to be done on both sides of the coin in order—if we really care, you know, we should be more flexible on both ends and be prudent and—and careful but there are things that can be done to—to allow people to make money and also to allow people such as myself that are interested in preserving the species to give me the tools so that I can produce them and, you know, put them wherever, you know, federal properties or state properties. It doesn't matter so long as we preserve them.

DW: Have you become active in that? Obviously you speak well and you are an expert on the subject. Have you worked with a local legislator or a local congressperson or testified at hearings or gone that next level to become an active person in that political arena?

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BT: I have testified in—in the Finance Committee in Washington in—in two separate occasions in—in two separate years. Mainly for—for the to—to encourage them to fund these programs that preserve land such as the Department of the Interior and the Wildlife Corridor. We cannot preserve species if we don't have land and one of the ways—one of the reasons why we're losing so many is because of habitat destruction. If we provide the—the—the habitat, the animals will come. You know, we don't necessarily have to have a recovery program for the Ocelot when we only have 100 acres of land. But if we had 5,000 or 100,000 acres of land and we only had 20 pairs of Ocelot in that area, they will take care of themselves. If we don't have the time or the know-how—how to allow them to propagate, they'll do it. So the times that I have testified was to encourage them to fund some of these federal programs in order to preserve habitat. To preserve endangered or threatened species.

DT: Can you talk about your efforts to reach out to the next generation and tell us what's a good way to inspire them to care about the things that you've been interested in?

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BT: Some of the things, you know, I recall a couple of years ago, a middle school principal asked me if I could go—go to his school and talk to a class during Arbor Day. And they wanted to buy a tree and plant it. And I said, nah, I'm not going to do it. I said, I'm not going to your cla—to your school and talk to a class and plant a tree. I said, what I'm going to do is I'm going to go to your school and we'll have a general assembly and we'll create a little

macro-habitat. And he said, what are you talking about? I said, well, so we plant a tree. Why do we plant a tree and I talk to 24 students when I can talk to 400 students and we can create a little area where, two years down the line, they will see a little bird building a nest because now it is a little habitat. They'll see butterflies,

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they'll see a hummingbird, they'll see things that then they can then connect to. Yeah, I remember two years ago, you know, we—we planted that because I said, and they will all participate. I said, you'll—you'll be amazed how many shovel-fulls it takes to fill a hole. And I donated about sixteen different species and I carefully selected them for color and shape and texture. And I—I personally dug all the holes and then we had a general assembly and it was required by me that every single student in that class would have to put at least a shovel of dirt in that one—in that one hole. And then to make it more exciting or them, I told them—I told all the teachers in advance I said, I want you to take paper, you know, like that paper they use for the adding machines. Take a roll of that paper and tell your students, all of them, what we're going to do tomorrow. And I want for all of them to sign their names and then I want you to roll it up real tight and tie it up with a little piece of string and bring it to the to the—to the thing that we're going to have. So they all did. And then I told all the teachers to collect them and then I told the students, who are the students for teacher so and so? Well we are, and all your names are here and all your names are here, and all your names are here. And then we did a time capsule. And we buried it. I said, now when you graduate from high school, we're going to do this again. And remember—remember all the little things that we're planting here? And I want you tomorrow, I want you next year, I want you during the summer, bring your mother, bring your father, bring your girlfriend or bring somebody else's girlfriend and tell them, I planted—I helped plant that tree and I helped plant that tree. And that's how I hope to make a connection with them. That it's something that belongs to you. You did it. Yes, I provided the—the holes and I provided the plants and I told you how to do it but you did it. It's yours. If you see somebody messing with them, you tell them

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hey, don't be mess with that. We did it and we're going to see birds and we're going to see butterflies. And it's amazing. I—I would just—I couldn't believe it and the teachers couldn't believe it because they—they had said that in previous years, they would plant a tree, you know, an oak or whatever and they said two or three weeks down the line it'd be broken and next year it wouldn't even be there, you know, just a little depression. And he said, you know, we're amazed how protective they are. And they would weed it and they would water. And I said, well I guess it's working. Cause that was my intention, to make them feel a connection that it's their property. So...

DT: I imagine that it became a favorite place for them. Maybe you could tell us what is a favorite place for you and describe it a little bit.

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BT: I—even though I've traveled, you know, I've been to many places, I walk ten feet from here and it's like another world to me. Somebody told me—it's nice—it's nice that you live out in the brush country because you get to see the changes monthly. You know, like during the drought and then during the summer and I said, no. I get to see the changes daily, almost every hour. I'm—I'm looking at an area here and I see the shadows and I see the way the sun's coming down and see a plant that's just about bloom, an hour later it's

blooming. I said, to me, I mean it's like an hourly basis. Things are happening here and I'm here to see them. I said, I feel bad that, you know, so many people are caught up on—on making their living and, you know, unless you're there, you don't see it. But when you're there, I mean, it's just constantly. You know, there's things happening every—every hour, you know, it's just and I'm just blessed so—so much that I'm here to see it all and experience it all. And of—of all the places, you know, that I've been to, I could just walk ten feet into there and I'm in paradise. Just in heaven.

DT: Maybe you could show us a little bit of your paradise?

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BT: I would be glad to.

DT: Thank you very much.

0:18:22

BT: Thank you.

(misc.)

[Walking and standing, discussing plants]

DT: Could you tell us about this plant, please?

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BT: This is a native Yucca or a Spanish Dagers, some people call it. And this is a really fascinating plant because these little—little flowers are edible. You can take the leaves and you can put them in casseroles, in soups. You can pretty much substitute them for onions whenever you're cooking. You just take the leaves, cut them up and use them like onions. You can put them in salads. They have kind of a—like a mild radish taste to them. In a couple of weeks, this little pistol where the seeds are will start to enlarge and it'll get about, well it gets bigger but when it's maybe twice this size, you can cut it and you can eat it like a cucumber. It has a cucumbery taste. As it grows and matures, it gets hard and woody and very green and it's no longer edible. But we'll wait until the end of summer and it will turn into a blackish-blue and it gets real goopy and it starts to collapse because it's real ripe. And again, it becomes edible. You just collect the whole seedpod. You brush off the ants because ants are really into the sugar and you put it in your mouth and you chew and you remove the fiber and the seeds cause it has real hard seeds and it is very, very, very sweet. The leaves were used by the indigenous people to weave baskets (they're real hard I don't know if I can cut it) but you would just cut little—little strands of it. You would take the whole leaf and just cut it into, you know, this—these long strands, you would put it into a fire first and it would make it real soft. And then after you get it fired and it's very soft, almost like a rope, then you just tie a simple knot (shows how) like so. And then you have a piece of string. If you need a rope, you would tie two or three together and the length of the rope depends on how—however long you need it. During emergencies, you're lost need a little shelter, you don't have any rope or string, you got all the rope and string you need. We're out here two or three days, we're starting to smell because we haven't taken a shower, we would then take a rock and we would dig some of the root. We would cut it up and we would put it in a little can—

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canteen or something with water, excuse me. It would make an excellent shampoo. So you could shampoo your hair and wash your clothes. At the same time, when we eat all the blossoms. it would remain this long stalk, with its short branches would stay there. We would then cut the stalk. We will build a little fire and we would roast it and we would eat it

like sugar cane. It's a real sweat taste and has lots of vitamins and minerals, you know, typically vitamin A, vitamin C, vitamin D and some of the simple sugars. So it's a very, very, very useful plant. It's a local Yucca our native Yucca that we have. I tell the students when we're walking around that not everything is edible and they need to know the difference between what can we eat and what can hurt us. And this is one plant that they would avoid. You know, like the boy scouts say, leaves of three, let it be. This is Coral Bean. It has a beautiful bloom. It's going to be blooming here in about two weeks. It's got these little trumpet-like flowers, they're scarlet color, kind of reddish in color. Excellent for hummingbirds and butterflies. But the leaves and the seeds are poisonous. If you cut the leaf and get the latex into your fingers, it's probably—it's pretty bad stuff. But some things can cure. During the winter we, you know, get exposed to the cold and oftentimes we get a cold. If we had a cold and it was accompanied with a lot of congestion, a lot of runny nose and we had sinus, we would make a tea from this plant, the Silver Sage. The indigenous people would boil the leaves, make a tea and drink it. They would add sugar if they had it or if they had honey from—from the bees, they would add honey to it. Some plants they would not add sugar to, or honey. Some plants they would. And it's amazing that they have done studies recently, in the last couple of years, as to why did they add sugar to some things. And some people—some

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people would say, well sure, you know, you're real sick, you haven't eaten, you know, your—your appetite's down, you don't have any energy, you drink water and you put sugar in it, you're going to feel better. I mean, you—you get sugar right? Sugar gives you energy. Well they've done studies, they have taken the same plant and they've taken people that have the same symptoms a cold, runny nose, and a lot of sinus congestion, they give one tea made from cenizo with sugar or honey, they give the other person cenizo without it, and the one with it recovers much faster than the one without it. So it appears that the chemistry is not complete until they added the sugar, whether it be honey or granulated sugar. So there's—they're the chemis—they even knew, you know, what chemistry to add. One plant back here...

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(Walking to plant)

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BT: One of my all-time favorites is this thorny brush here. Living here, next to the border, and even in the early days, you know, a rancher would be up here taking care of his stock and he would take the stock for water, be it at a pond or creek. He needs to drink water too so he would bend down and drink water right there with the animals. And oftentimes the pool would be polluted. There would be amoebas in the water. And the saying here is, if you go to Mexico you can eat the food but don't drink the water because you will be very sick. You get amoebic dysentery, very prevalent in Mexico. This is the cure for amoebic dysentery. This is called All Thorn Goat Bush in Spanish, I mean, in English. In Spanish it's called Amargoso. Amargoso, in Spanish means very

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bitter. When you got amoebic dysentery, you'll know it. You'll—uncontrollable diarrhea. Lots of diarrhea, low grade fever. You cut the twigs, the limbs, the leaves, everything. Basically the same recipe, one whole hand-full to about three cups of water. You boil the

water, you throw the ingredients in there, you let them boil for about five minutes and don't even add sugar or honey. You're wasting it because it's so bad, I mean, it tastes so horrible that if you add it, it would be horribly sweet, I mean, you taste it horrible anyway so we don't even add it. But out of almost 200,000 plants that have uses of one kind or another, less than 1% have been studied under laboratory conditions. There's a lot of room—a lot work that needs to be done. This plant has been studied under laboratory conditions and the one part per million extract from the tea will paralyze the amoeba. So they knew if you got those conditions, you boil the tea, you make it you drink maybe an 8-ounce glass, maybe three times a day for about four days. You have diarrhea, that little amoeba sticking through your lining of your gut, but you have diarrhea, you paralyze it and it just washes right out into your waste. So in about three days, you're back in business. I remember many, many times when we would be out here and we would have diarrhea and immediately, I mean, we didn't have to wait for our parents to do it. We would do it and then we would hold our nose and we

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would drink it down fast because it is horrible. But then a couple of hours later, now we could eat and we're controlling it. So it's amazing. Of all the plants that we have here, very few do not have thorns. This plant here is called Coyotillo both in English and Spanish. It has a little green berry right now but, in a couple of weeks or maybe a month, that berry turns to a blackish-blue color. And this plant is not poisonous but it might as well be. Because when you take the little berry or the leaves or the twigs, but especially the berry, if you take the berry and you bite down on it and break the seed, it releases a chemical substance and it kills all your nerve-endings. So if you eat like a handful, within two hours, you would start falling because it mainly affects your legs. And then within four hours, you probably will not be able to walk, irreversibly. I mean, once it kills your nerve-endings, you're—that's it. There's nothing that anybody can do to bring you back. It is very amazing to me that the—the—the people that suspected somebody of consuming the berries of a Coyotillo, they're blackish-blue and it would stain your lips. So if they ever saw a little kid running around and falling frequently, they'd say oh, he probably ate Coyotillo. They would take the Coyotillo plant, they would dig the root and they would give him an antidote made from the root of the plant that harmed him. So that's—that's kind of amazing. And it's one of those things that would be very difficult to experiment since it's irreversible but that's how they did it. They would make a tea from the root, didn't have to be the same plant. So, and it's kind of neat that the plant has chosen not to have thorns while the Amargoso has real tiny thorns and big, I mean, small leaves, big thorns, to keep browsing animals from feeding on it. Coyotillo, no thorns, large leaves, relative to what we have here but it's got a chemical protection. When animals feed on the leaves, they get violently sick and they won't do it again. They learn by asso—no, I'm leaving that thing along. So it uses the chemical defense rather than the

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physical defense like these other plants. This is Spiny Hackberry and it should start—I—I see little buds. It's going to start flowering in the next two or three weeks. This is the relative to the Sugar Hackberry that would grow along the river and it produces orange berries. They're very, very sweet and very—this plant would provide moisture and it also provides nourishment because, even though we cannot extract the moisture, the plant extracts the moisture from the soil and it incorporates it into the fruit and a lot of the birds

around here, they don't have to travel anywhere to drink water. They'll simply come to the Spiny Hackberry and feed on the berries and get their juice. So when we were small and we were real thirsty and we happened to find granjeno around, we would eat the berries because they are very, very juicy and it's got a small seed and it's crunchy. So you can eat the whole thing. You don't waste anything. And it has lots of glucose, fructose and galactose so it gives you real quick energy. Very, very useful plant. It—it—it—we ate this. It is amazing the mockingbird feeds a lot on this plant or at least their babies and they—they get their—their breeding cycle to match the time when the fruit on the Hackberry is ready. So right now they're building nests. The plant is starting to bud. By the time they lay their eggs and have their babies, this plant will have food and they feed the berries to the birds. So it's kind of neat how they tie in their cycle in order for the fruit production.

DT: It seems like many of the plants that are useful are bushes or small trees. Are any of the grasses or forbs considered useful?

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BT: There's a—there's a few small—small herbaceous plants I would say. One of them is an edible plant and it has, you know, to the untrained eye you would see it and be starving, not knowing that five inches below the ground is a not a ball but a carrot-looking like root. Cylindrical, varying in depth and size. And it's very nutritious and very tasty. But if you don't know it, you know, the food source is right there. There is another one that also has a taproot like a carrot and that is a medicinal plant. That's the one that I told you was called Epona and it's used for the urinary tract. Other than those two plants that have edible roots, I'm not aware of any other grasses that would produce grains in sufficient amounts that they could—could harvest. But, you know, there are so many trees and berries, you know, right—right here. It's a perfect example of—this is called Klepin(?) in Spanish or Lotebush in English. Again, small leaves, lots of thorns. The berries are green. They will be turning purple/black in a few more weeks. This is another edible berry. You just take it and eat it. If—when my wife prepares the dish, we often get people saying, that's not how the indigenous people ate it. And almost 100% of the time my wife's reply is, you probably wouldn't eat it the way they ate it. You wouldn't like it. And one of the ways the indigenous people would eat the berries, they would just harvest them right from the—from the Lotebush and they would eat them. Well, we can do that but because we have developed other tastes, we wouldn't like it. It doesn't taste good at all. In fact, this berry will not taste good until it's way over-

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ripens. It dries sort of like a prune. Probably the—the nutritional value of it has dropped tremendously but the taste has improved. It becomes a little sweet to eat. But the indigenous people would eat them as soon as they would get ripe, they would eat them. One of the things that when the Indian tribes would fight with each other in the—in the heat of the summer, they would not fight anymore and they would maintain themselves within—within sight. But they had to stop fighting because the Prickly Pear would produce the tunas or the fruit in the heat of the summer June, July around that time. And they knew that unless they stopped fighting to make time to harvest the tuna, they would not make it during winter cause in the winter here it's extremely hard. There's hardly anything to eat. So they would, for the months when the tuna—when the Prickly Pear had tuna, they wouldn't fight. They would maintain their distances and, in fact, groups would migrate from—from areas they—they had their—here in South Texas, because we

have so many Prickly Pear, Indian groups like from—from the coast where they mainly lived on shell fish and other things. In the summer they would have to move here to harvest the tuna. Groups from Houston and other areas of the state, they would move here, they would migrate here. They would take the tuna and they would dry it and then they would pack and then they would take it for the summer, they would feed on the summer—in—in, I mean, in the winter. In the summer they would consume as much as they could of the tuna. So it's very, very important crop. The tuna, the Mesquite and the Ebony were just as important as the rice would—would have been to the Japanese. The Orientals and corns would be to the Mayans. Those three crops were extremely important for—for the people that lived in this area. You know, they just couldn't survive without them.

DT: Could you...

(misc.)

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BT: You know, the indigenous people depended largely on Mesquite. They ate it in many, many different ways. And it's kind of ironic that you can survive, you can do the things if you have the knowledge. Like knowledge is power. You don't have the knowledge, you could die with water or food right around you. And I recall a story by [Texas Ranger] Captain [Leander] McNelly when they were here and there were a lot of Mexican bandits that would come here and steal cattle from ranchers and they were camped in—in King Ranch. And this informant that they had came galloping in one day and told them, you know, that the Mexicans had stolen cattle and they were headed to Rio Grande City and they were going to cross just below Rio Grande City so McNelly would give his riders five minutes, from the time he said let's go, they had five minutes to settle their horses and get their canteens and rifles and whatever and let's go. So they rode hard and came to the bottom of Rio Grande City and they waited and waited and waited and nothing happened. Well by about the second day, this one ranger was totally starved and he told the other rangers, when are we going to eat, you know, we always leave in such a hurry we didn't bring any supplies and I'm starving and my horse hasn't eaten anything? And the other rangers said, why are you starving? And he said, well we're not eating. And they said, we're eating. Why aren't you eating? Eating what? He said, Mesquite. You eat the Mesquite beans, the pods and you feed them to the horse. So he tried and soon thereafter, you know, he said he went on his way and he totally forgot about being hungry

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because of the seedpods. Not only is this plant good for food but it's amazing because it produces almost all the nitrogen that the plant requires to grow and in an area where the soil is very depleted, you will see a Mesquite with lots of things growing at the trunk because it produces more nitrogen and it—it—the surplus feeds other plants. When there is a condition known here—when you consume a lot of the berries that have—are high in sugar, somehow, in the mornings, your—your eyelashes stick together. It produces a resin in your sleep and it—it comes out in your tear ducts and it sticks together. My grandmother would—would collect the seed—the leaves of the Mesquite and put them in a glass of water for a few hours and then in the next day whenever this condition would happen, they would put the liquid in there to dissolve that. But they also used it like Murine, when you had eye irritation, reddish of the eyes, they would use a few drops of the liquid from this plant in substitute of Murine. The flowers of the Mesquite are edible. If I was to give you this flower where the flower buds have not opened and ask you to eat it, it would taste like

grass and you would say, who would want to eat that. If I would give you this other flower here where the blooms probably opened a couple of days ago, you would almost choke because it's real fuzzy and all the pistils and the pollen—a lot of it's still there. And it's very hard to swallow cause it's real fuzzy but this one here had opened probably a day before this one opened, so this one is not as fuzzy as that. And this one we could use. We could put this in a soup or

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in a casserole or we could just, you know, we could just take like this and—and pluck all this stuff and just eat it. You know, we'd—we'd chew it down and—and swallow it. It has a—it has a really nice—nice taste to it. Of course, the Mesquite beans were extremely important to the indigenous people. And they were very, very important when I was growing up. We consumed tons of Mesquite. All my family and I would, in the summer, Mesquites are really strange in that in—in a good rainy year, the crop is very poor. It would have very little Mesquites. But in—in times of drought the—the more severe the drought, the more Mesquites will produce and the sweeter they are. So it kind of worked good for us because in rainy years there would be other fruits and things that we could eat. In years of drought, when those things were not available, there would be ample mesquite and we would feed on lots of Mesquite for the stalk and—and—and for us to eat. So it's a very, very, very, nice plant to have if you know what you're looking for. It—it can provide medicine and it can provide food throughout the different parts of the year.

DT: Thank you for helping us to know what to look for and to know the—the outdoors is full of food and other kinds of useful resources.

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BT: Well, thank you for being interested.

End of reel 2096.

End of interview with Benito Trevino.